

Patent claims

1. A method for cooling thermally stressed regions in a turbo machine (1) which has a live-steam feed line (9), an inflow region (17), a housing (2) and an exhaust-steam region (7), a flow medium flowing through the turbo machine and leaving in the exhaust-steam region (7) during operation, characterized in that part of the flow medium from the live-steam feed line (9) is cooled by means of a heat exchanger (8) before entry into the turbo machine (1) and enters the turbo machine (1) via the inflow region (17), thermally stressed regions that are located in the inflow region (17) being cooled by the flow medium that has been cooled in this way.
2. The method as claimed in claim 1, characterized in that the heat exchanger (8) is located in the exhaust-steam region (7) of the turbo machine (1).
3. The method as claimed in claim 1 or 2, characterized in that the part of the flow medium that is passed to the heat exchanger (8) is removed downstream of a shut-off valve (20) located in the live-steam feed line (9).
4. The method as claimed in one of claims 1 to 3, characterized in that the temperature of the part of the flow medium that is cooled in the heat exchanger (8) lies at least 10°C below the temperature of the live steam.
5. The method as claimed in one of claims 1 to 3, characterized in that the temperature of the part of the flow medium that is cooled in the heat exchanger (8) lies at least 20°C below the temperature of the live steam.

6. The method as claimed in one of claims 1 to 5, characterized in that the part of the flow medium that is cooled by means of the heat exchanger (8) is passed to a thrust-compensating piston (19).

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7. A turbo machine (1) which has a live-steam feed line (9) through which a flow medium can flow and which leads to a live-steam inflow region (12), the turbo machine (1) having an exhaust-steam region (7), characterized in that the live-steam feed line (9) has a branch (10) with which part of the flow medium is passed via a line (15) to a heat exchanger (8), and the turbo machine (1) has a feed line (16) downstream of the heat exchanger (8) into an inflow region (17) of the turbo machine (1).

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8. The turbo machine (1) as claimed in claim 7, characterized in that the heat exchanger (8) is arranged in the exhaust-steam region (7) of the turbo machine (1).

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9. The turbo machine (1) as claimed in claim 7 or 8, characterized in that the live-steam feed line (9) has a shut-off valve (20) upstream of the branch (10).

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10. The turbo machine (1) as claimed in one of claims 7 to 9, characterized in that the feed line (16) is led to a thrust-compensating piston (19).